approach

MARCH 1979 THE NAVAL AVIATION SAFETY REVIEW

HELICOPTER/SUBMARINE TRANSFER OPERATIONS

A pilot's

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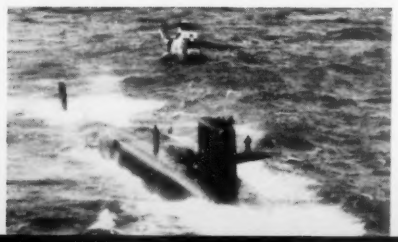
IT'S a strange marriage of aviation and subsurface communities that brings about a successful helicopter personnel transfer to an underway submarine. Because Naval Station Rota has both a submarine replenishment site and an airfield, we often have the opportunity to provide logistic support services to submarines. Our experience didn't come easily though, and we've learned a lot in carrying out over 40 missions in the past 2 years. We've safely transferred more than 130 passengers on and off submarines in the vicinity of Rota. We'd like to share this pilot's point of view with others, in an effort to help keep future helo/sub operations throughout the Navy just as safe.

We've worked closely with COMSUBRON 16 over the years to inform them of our HH-46A helo's capabilities and limitations. The H-46 is a unique helicopter with its tandem rotor configuration. It is very forgiving and allows acceptable relative winds of up to 35 knots at 90 degrees. Conventional helicopters with tail rotors are much more limited in the relative winds that they can accept. Cruising at 120 knots, we have approximately 2 hours of fuel onboard. This capacity can be increased to over 3 hours with the addition of an internal auxiliary fuel tank. Our hydraulic external hoist, mounted on a boom over the personnel door on the right side of the helo, has a maximum rated capacity of

eye view

600 pounds. Because the hoist is located behind the pilot, hoisting is tedious, and the pilot must rely on the aircrewman in back for directions in order to remain in a steady hover. The H-46 has only limited navigational equipment and only one radio (UHF).

Prior to launching, we consult a list of go/no-go criteria which were developed jointly with the help of COMSUBRON 16 and COMFAIRMED. The go/no-go criteria consider such factors as winds, sea state, distance, cloud cover, visibility,



"COMSUBRON 16 arriving!"

type of submarine (SSN or SSBN), and the items to be transferred. We also consult the H-46 NATOPS flight manual and NWP 42(B), "Shipboard Helicopter Operating Procedures." We then hold a thorough crew briefing, covering all aspects of the flight, including such emergencies as lost internal communications, hoist failure, and engine failure. At the helicopter, our aircrews carefully check the hoist and its cable for broken wire strands. They also ensure we have enough survival gear, cranial helmets, and inflatable lifevests for all passengers.

Utilizing the helo's TACAN and low-frequency homer along with DR navigation, we fly out to sea at 1000 feet for the rendezvous. Spotting the submarine is usually most difficult towards sunset, but we've never failed to find one – although it took us two tries on one occasion.

After locating the submarine, we visually determine the relative winds since our radios are used for emergency transmissions only. If we need to pass any word to the submarine, we can use our loud hailer, which is audible up to 2 miles. As we circle overhead waiting for a green paddle signaling that the submarine is ready for transfer, we ascertain the relative deck roll. Our aircrewman is busy in back rebriefing our passengers and rigging the rescue boom for hoisting.

Our primary hoisting location on SSBNs is the afterdeck (missile deck), just forward of the auxiliary machinery room No. 1 hatch. We find the SSBNs easier than the SSNs due to the SSBN's large hoist zone and usually good visual references for the pilot to use while in a hover. Transfers to SSNs are much more difficult and usually must be made with the helo hovering over the starboard sail plane – facing aft – due to the lack of an afterdeck drop zone and poor

visual references forward. To obtain good relative winds for the helo, an SSN may have to actually back down. Because of these difficulties involved in SSN transfer operations, SSN transfers are only attempted in emergency situations.

The right-seat helo pilot makes the approach to a hover from starboard to port, lined up approximately 45 degrees off the port bow. The green paddle from the submarine is our signal to commence the approach. Since the pilot is continually receiving relative position information from the aircrewman operating the hoist, the copilot is required to monitor the gages and the radios. Any radio transmissions while the helo is in a hover tends to distract the pilot and may cut out vital communications between him and the aircrewman.

When the aircrewman in the back is ready to begin the transfer, he advises the pilot and signals for the first passenger to unstrap and move forward to get into the hoisting sling. Baggage is usually transferred after all

passengers are safely on deck. Any survival gear that was worn by the passengers is returned by hoist at this time.

If any passengers are to be picked up from the submarine, our aircrewman will first lower any special instructions along with the cranial helmets and inflatable lifevests. All survival gear must be donned by passengers prior to approaching the helo sling for the short ride up the hoist cable. Passengers are always lifted one at a time, move aft, sit down, and strap in on entering the helo.

Cargo transfers to submarines are relatively easier as long as the material weighs at least 20 pounds. Lightweight material is placed in special weighted bags carried by the helo. These bags minimize the tendency for lightweight items to blow into the helo's rotor system while being hoisted. Although the hoist has a 600-pound capacity, the pilot should be advised prior to securing any items weighing over 200 pounds, so he can anticipate the required control movements when weight comes on the aircraft. Naturally, the hoist cable should never be tied in a knot or secured to any part of the submarine.

Hoist operations to the starboard sail plane of SSNs or SSBNs are very difficult and require close crew coordination to maintain a steady hover over the small drop zone. The pilot's only outside references are the submarine's rudder, a small portion of the afterdeck, and the aftermost portion of the sail.

Most emergency situations in the H-46 while in a hover, barring a catastrophic failure, will allow time to finish any hoist already in progress and move away from the submarine. A failure of one of the H-46's two engines while in a hover will most likely result in a forced water landing after clearing the submarine's deck. A single-engine water takeoff is then possible to return home. During hoisting operations, the aircrewman stands ready to sever the hoist cable if the emergency situation dictates, while a passenger is on deck with the sling on. If a failure occurs in our hoist system, we will be able to move the helo into a low hover to place the partially hoisted passenger back on deck where he can get out of the sling. Because of the inherently risky nature of helo hoist operations with submarines, the helo pilot or the submarine commanding officer can abort the mission if they feel that the situation becomes too dangerous. Teamwork of both the helo and the submarine crew are essential to continued safe transfer operations.

Although we feel that we have more than our share of experience in helicopter/submarine transfer operations at Rota, we can never relax, and must continually learn from our mistakes. We have also learned to expect the unexpected. Just when we thought we'd seen it all and knew everything, we were confronted with a transfer to a British DREADNOUGHT-class submarine recently that really opened our eyes. The decks were awash with 40-knot winds, and we were going to try a sail plane drop, but it had no sail plane. Fortunately, persistence paid off. We were able to maneuver him for a bow drop on the fourth try, and our passenger was lowered safely aboard. ◄

APPROACH is a monthly publication published by Commander, Naval Safety Center, Norfolk, VA 23511. Subscription price is $15.00 per year; $3.75 additional for foreign mailing. Subscription requests should be directed to: Superintendent of Documents, Government Printing Office, Washington, DC 20402. Controlled circulation postage paid at Norfolk, VA.

Airspeed Indicator Glitches. During a pilot NATOPS checkride in a P-3C, a three-engine ditching was simulated at 7500 feet. The pilot began slowing the aircraft to the desired approach-flap ditch speed of 113 knots. However, before he could slow enough, stall buffet was encountered at 120 knots on the pilot's gage and 118 knots on the copilot's gage.

The pilot doublechecked both angle-of-attack indicators. They read 18 units. As the nose of the aircraft fell through, the pilot added power and the P-3 was flown out of the stall. The pilot then slowed up again to check the start of a stall buffet with landing flaps. Buffet was experienced about 15 knots before predicted. The checkee was invited by the checker to take it home, and they decided to fly the approach 15 knots faster than required. An uneventful landing was made.

Maintenance personnel went to work. They hooked up the TTU 205 test equipment and verified both pilots' airspeed indicators were 12 knots off. The tester was also doublechecked by use of a NARF manometer. Other aircraft were then checked using the TTU 205. One aircraft had gages which were 17 knots off; another read 5 knots in error. As a result of these discoveries, the squadron recommended all P-3 aircraft airspeed gages, within 50 numbers of serial number 1310, be tested for accuracy.

Since the P-3 uses two entirely independent pitot static systems, it is normally assumed that discrepancies will occur in only one system, and will be detected easily by comparison. No phase check of the system was required.

Another squadron reported several of its aircraft with one or both airspeed indicators in error. So, another recommendation was made to add the calibration of the AOA (angle-of-attack) system to the phase maintenance program – to provide a reliable crosscheck of the airspeed systems. Most flightcrews did not consider the AOA reliable enough.

An accurate AOA system will immediately alert the flightcrew to possible airspeed errors and will provide important information if any splits develop between airspeed indicators. Another method was proposed to give a quick and accurate method for checking the reliability of both airspeed systems – set SHP for both loiter and maximum range obtained from the appropriate NATOPS charts.

Sav-a-Plane. So often the importance of air traffic control personnel is lost because they play a behind-the-scenes part in aviation safety. But without the alertness and coordinated efforts of Jax Navy and FAA personnel, coupled with an airborne S-3 *Viking* crew, a potential disaster was averted.

On November 8, 1978, one of my pilots, LCDR Dopson, launched in his T-28 *Trojan* from NAS Pensacola to NAS Jacksonville. The flight was to overfly a low deck of clouds with the forecast destination weather: 1200 feet broken. Alternate weather was 8000 feet broken (NAS Cecil). After passing Tallahassee, the *Trojan's* UHF began to act up and eventually quit completely. Lost comm procedures were set up utilizing the transponder codes 7700/7600. A VOR approach was flown at destination, but minimums occurred before breaking out. A missed approach was flown to on-top conditions. LCDR Dopson attempted to look for a break in the overcast in hopes to find a field that was VFR. Bailout procedures were reviewed, as gas was slowly becoming critical for the T-28.

About that time, a transiting *Viking* was vectored by local air traffic controllers and joined up on the T-28. LCDR Dopson flew a flawless wing on the S-3, breaking out at 200-300 feet at NAS Cecil. The landing and rollout were without further incident.

Thanks to the coordinated efforts of Tower, Approach, Center, and the crew of the *Viking,* the *Trojan* and pilot will fly another day. An Attaboy is in store for all personnel involved in this incident. To controllers McCall, Crow, Thomas, Notestine, and Belcher, plus the S-3 crew of Smith and Logsdon – well done and thanks. And not to forget one of my pilots, "Way to hang in there, Dopson – a real professional job." – *CO, NARF, NAS Pensacola*

APPROACH also salutes this team effort. Keep up the great work. Congratulations to all!

Get His Attention First. A flight of three H-1s were on a cross-country. During the first day, the No. 1 engine of one of the birds had the chip light illuminate on two occasions. Each time, the incident was handled in accordance with NATOPS procedures (land, remove and clean the chip detector, and ground turn the engine).

After the first night's RON, the flight continued the journey. An hour after departure, the No. 1 chip light again illuminated and the pilot dutifully made a precautionary landing on the desert. An inspection failed to disclose any fuzz, and a decision was made to head for a divert field 100 miles away.

Three minutes after takeoff, the chip light again came on, the engine was retarded to idle, and the flight was continued because the terrain over which they were flying was too rugged to land. Twenty miles down the road, No. 2 N_g began to fluctuate and a few minutes later the pilot heard a loud noise.

Instrument gages were normal, but the pilot began a descent while looking for a landing site. The RPM warning horn came on, and the pilot, thinking No. 2 was about to fail, lowered collective and opened No. 1 throttle to make a powered approach and landing. He heard a loud noise as No. 1 failed. The pilot secured No. 1 and was told by a wingman that No. 1 was on fire.

The pilot pulled the No. 1 fire handle and cross-checked the gages. He found that the RPM horn had been on the high side and No. 2 engine was still operating normally. He pulled power on No. 2 for landing. The No. 1 fire light came on as he landed and the main fire bottle was discharged. The helicopter was shut down and the crew departed the helo. There was a small residual fire which was quickly extinguished.

The incident report made no mention of any inspection or maintenance action at the stopover point after the first day's flight, but it's assumed some sort of inspection was made. There was something wrong with No. 1 engine, and it gave lots of reasons why it should have been carefully checked before departure on the second day. You gotta believe those gages.

Unsecured. The weather at takeoff was sky obscured, indefinite ceiling, visibility 1 mile, in thick haze. About 200 feet into the climb, the pilots of the CH-53 felt the helo shudder, and a strong wind blow through the cockpit. The escape hatch and window had departed the aircraft.

The window sailed down and struck a civilian automobile. The pilot declared an emergency and returned for an uneventful landing. Troubleshooters found that the helicopter had been used for a series of egress drills over a period of time, and during the drills the window had been removed from the aircraft.

When the window was reinstalled, the actuation handle wasn't shear-wired. The handle was partially actuated allowing the lower window retaining pins to be slightly retracted. Inflight vibrations caused the retaining pins to retract fully, and the window departed after takeoff. The incident could have been avoided by careful maintenance work and thorough preflights by the plane captain and pilots. ◀

CARGO LOAD SHIFT

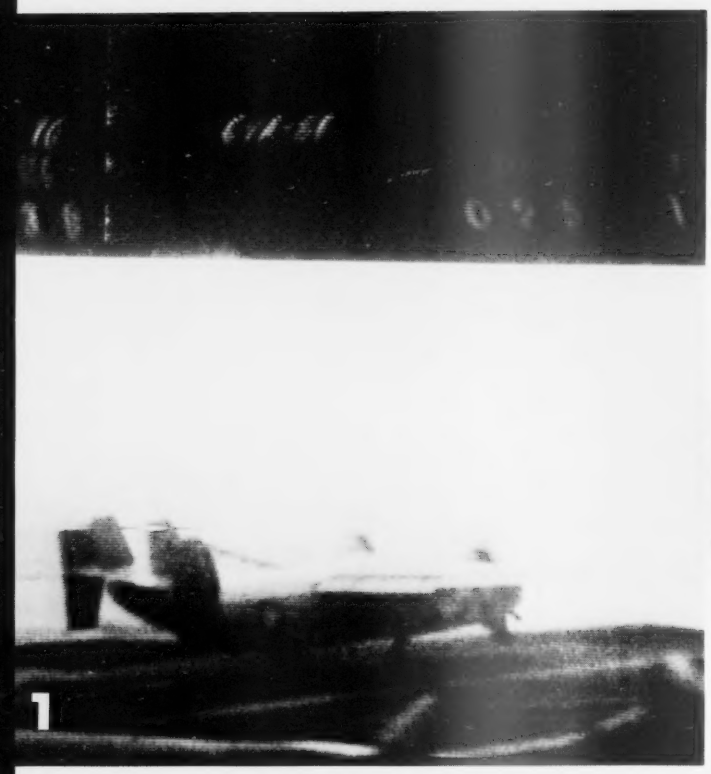
SEVERAL articles have appeared in recent issues of APPROACH concerning problems with cargo loads. There have been incidents written up about incorrect weights, hazardous material, and fuel leaks from unpurged engines being transported.

This story concerns a load shift which ended in tragedy. As is evident from the photographs, the crew and passengers onboard never had a chance. They were all killed.

The COD landed aboard a carrier early one morning. They offloaded the material they had hauled to the carrier from the beach and prepared a load of two 1600-pound motors and passengers to take back to Homeplate.

When ready to go, they were positioned on the waist catapult and launched. The investigation after the crash revealed that the two motors were secured improperly for the loads imposed by the cat shot. During the launch the motors tore loose, skidded aft in the aircraft, upsetting the aircraft center of gravity, and caused it to crash.

Cargo handlers at terminals, shippers, and aircrews must know the proper procedures for airshipping material; must observe safety precautions in inspection, preparation, and documentation; and above all must be certain that cargo loads are secured properly in aircraft. ◄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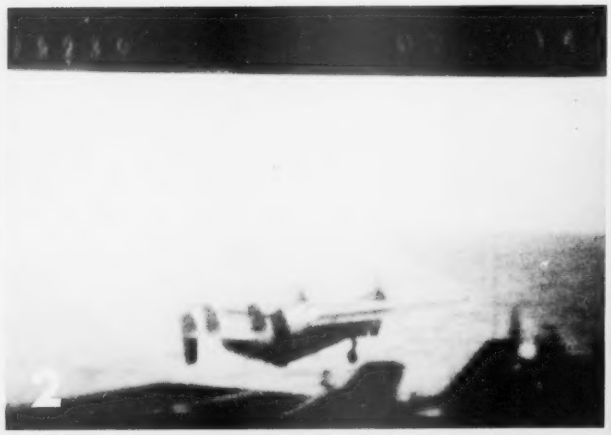
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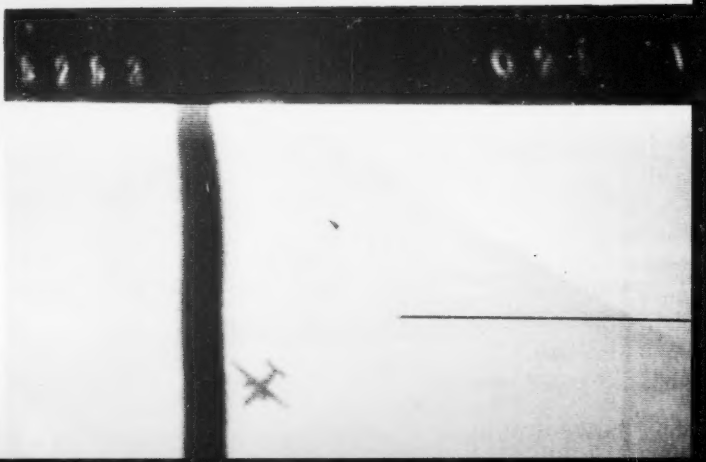
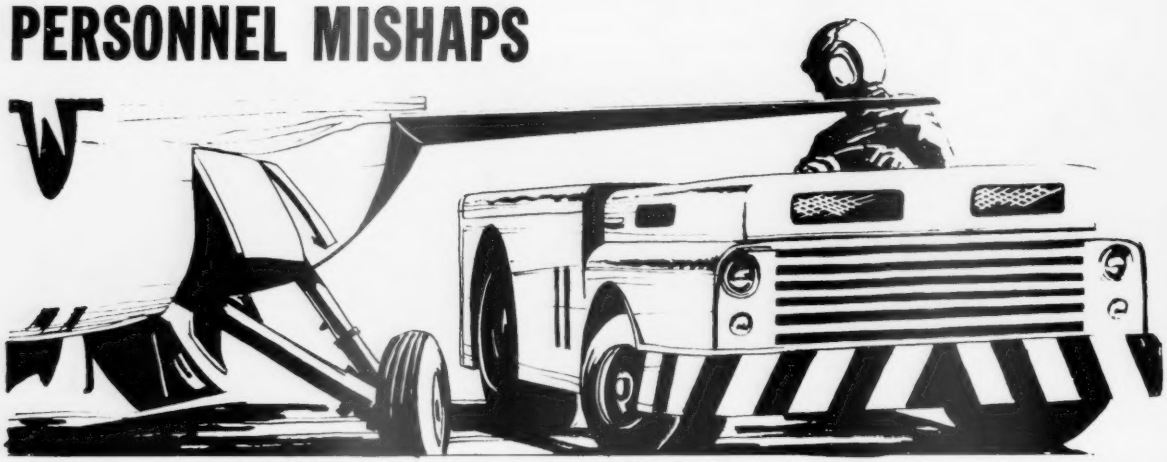


PERSONNEL MISHAPS



INJURIES to flightcrewmen and support crewmen continue without ceasing in the aviation community. Safety reports, OPNAV 5102 forms, and other messages describing injuries reach NAVSAFECEN daily. There may be some readers who will shrug shoulders and pass this off as inevitable. But is it? Do we really have to have these mishaps? In the numbers that we do? Let's take a look at three recent personnel mishaps.

• Maintenance control issued a MAF to work center 230 to replace and check a decoder programmer in an S-3. A qualified AO3 and an AA installed a decoder and began a maintenance check of the equipment. A precheck requirement, complete sonobuoy download, was ignored. During the course of the decoder check, the P-1 chute functioned normally. Next, the tester was placed in chute H-8. The AO3 went to the TACCO station to complete the check and the AA began to load a sonobuoy in chute P-1 while the AO3 set up the TACCO manual release panel. Chute P-1 fired! The fire button had not been depressed. When the chute fired, the sonobuoy struck the AA in the upper right thigh and rode up his right side to just below his rib cage. The AA was rushed to sickbay for observation for trauma to the right abdomen.

• It was O-dark-thirty. An AA, assigned as an MD-3 tractor driver, was involved in a respot, near elevator No. 1. Several A-7s were parked (nose pointed toward the starboard side) on the forward part of the flight deck. After parking a helicopter 20 feet from No. 1 elevator, the driver made a 360, starting from the port side going toward starboard. The driver turned his head back to watch his tow bar and to ensure there were no chains in the way. When he turned his head forward, the tractor was only a foot away from an A-7 tail. He was unable to stop in time and crushed his neck and chest. He received an 8-inch cut on his throat, a lacerated spleen and liver, and severe contusions. He was MedEvac'd to a shore hospital.

• After a helicopter pilot had made his final night landing, the deck crew prepared to push (muscle) the helo into the ship's hangar. There were nine men in the push detail. One of them, acting as chockman, was following just aft but mostly alongside the mainmount. His job was to insert the chock if the helo stopped. The space between the hangar door opening and the mainmount is 2 feet. As the helicopter rolled into the door opening, the chockman saw a door handle protruding about 6 inches from the door frame. Even though the chockman had performed this job for months under similar circumstances, he tried to step past the handle before the mainmount reached the closest point of passage. This put his foot directly under the gear. The helicopter rolled over his foot and was stopped immediately. The chockman was wearing steel-toed shoes which prevented him from losing any toes, but he did fracture Nos. 2/3/4 metatarsal bones on his foot.

These examples of personnel mishaps are typical of the kind we read about over and over again. In the first example, the injury could have been avoided had the warning in the MIMs, *to download prior to installation and check*, been followed. In the second example, a moment's inattention or distraction (and no light) almost caused the driver to lose his life. In the third example, haste, and possibly carelessness or complacency caused the chockman to get his foot crushed.

In all three examples, there was little or no supervision. Where are all the supervisors? How come, in the first and third examples – where someone was in charge – that person didn't brief the other(s) on the safety aspects of the job? ◄

Winter is upon us

THE winter flying season is still upon us in full swing (except for those few that are more fortunate to be in sunbelt states). Rapidly changing weather conditions and a high percentage of IFR weather prevail. The once familiar checkpoints have disappeared with the fallen leaves and ongoing snows that winter brings about.

The most common accidents during this season are caused by inadequate preflights made by pilots and crews that rush through inspections because of the cold. They may get into these accidents by:

- Attempting takeoffs with coatings of frost, ice, or snow on the tail and wing surfaces.
- Forgetting to plan for higher winds aloft and thus being forced to make emergency landings after running low on fuel.
- Sliding on ice- snow-covered runways.
- Inadvertently flying into adverse weather conditions.

The prevention measure for these accidents or near-accidents is – *preparation*. Plan and prepare your next winter flight to expect the worst, and experience the best. Don't *chance* anything. Be here in the spring!

Adapted from NATC
Professional Safety Forum

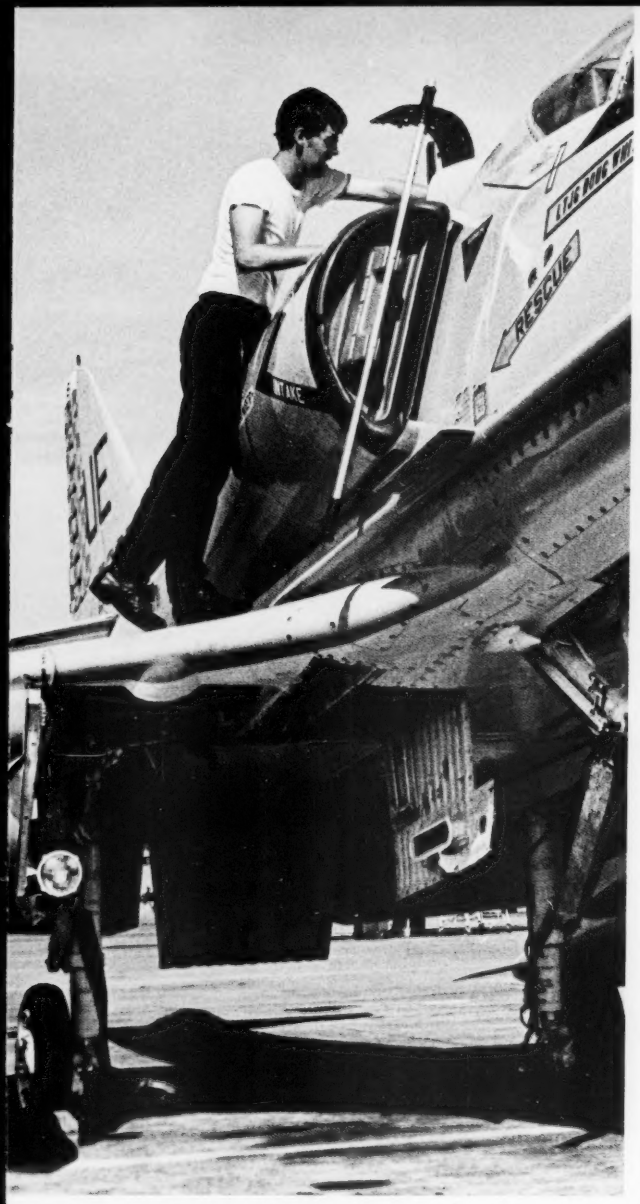
Don't forget aviation-ground safety programs for '79

CNO has established the *aircraft accident goal* (major aircraft accidents per 10,000 flight-hours) as .58 for 1979. All commands will strive to meet or better this figure (goal). In past years, some commands have met or bettered the established goal; others haven't. There is one common factor. Each year all commands start with a clean slate. Everyone is on equal footing. All start with a "back-in-the-saddle" program. Safety programs are reviewed. Stand-downs and surveys are conducted or scheduled. Lectures, quizzes, flight and ground checks are given to aircrews and aircraft handlers. All these methods help the Navy and Marine Corps toward meeting or bettering the CNO-established goal. Aviation safety is an all-encompassing and ongoing program for 12 months of the year. No rest, no breaks. Constant monitoring, updating, enforcing, and supervising safety orders and directives are some of the means that justify the ends.

While Naval aviation goes about lowering its aircraft accident rate, let's not forget the aviation-ground mishaps (crunches) that plagued us again in 1978. Although there is no established ground mishap rate *per se*, Naval Safety Center predicts 800 ground mishaps (crunches) in 1979. This amounts to many man-hours and dollars spent on repairs, not to mention the time lost in unit training and readiness. There have been two fatalities and 180 major/minor injuries as of December 31, 1978. It is imperative that the above number be reduced in '79 lest Naval aviation price itself out of the business. If each command reviews its ground mishap record for '78, it should be able to reduce its own figures significantly by using commonsense alone, if nothing else. Apply some of the principles in the first paragraph, modify them to fit the ground situation if need be, and a reduction should follow.

Let's take a look at some examples of ground mishaps that occurred in 1978, some suggested methods of prevention, and you add other means to help lower your unit's ground mishap "rate" this year.

Transport. The *Skytrain II* was being towed out of the hangar when the wingwalker noticed that the doors were not open wide enough to accommodate the exiting C-9. She shouted "Stop!" to the director who shouted "Stop!"



to the tractor driver, who did – rather abruptly. The towbar snapped, and before the brakerider could react, the C-9 impacted the hangar doors.

Prevention: Although there were adequate numbers of personnel involved, next time ensure that the doors are fully open, towing speed is well within limits, and that a viable communications system (oral, visual, or electronic) is established between *all* members of maintenance crews before the evolution starts.

Patrol. A metalsmith was attempting to move a B-2 checkstand into position to repair a portion of the *Orion's* aft radome. The stand became hung in the hangar door tracks. A second metalsmith came to the aid, and with the assistance of a towbar, moved the stand out of the tracks. The stand moved down the inclined hangar deck, and the metalsmiths were unable to stop it before it impacted the P-3's mad boom.

Prevention: Don't use the "Bigger Hammer" solution and force something. Ensure that adequate personnel are available to perform the task at hand. Any apparatus that is mobile should have some type of brake/chock system readily available/workable when needed.

Helicopter. While spotting the *Sea King* in the hangar for maintenance, the TRB (tail rotor blade) struck the TRB of an adjacent FRAMP maintenance trainer. The crew consisted of a director, brakerider, two wingwalkers, a trainee tow tractor driver, and instructor in the right seat! The first attempt in spotting was aborted due to the close

proximity of the H-3's sponson and the FRAMP No. 4 MRB (main rotor blade). The second attempt brought on the crunch as everyone was monitoring the sponson-MRB clearance. Consequently, the two TRBs intermeshed.

Prevention: Safety is a 360-degree operation. Don't fixate on one phase or it will turn around and bite you as it did in this case.

Fighter. The *Tomcat* with no brakes (its hydraulic rudder actuator was removed) was chained to the No. 4 elevator awaiting respot. Respot commenced, the spotting dolly attached to the nosewheel became aligned with the wheels of the F-14 just as the carrier went into a list. The aircraft, with its spotting dolly in tow, started to roll uncontrolled towards other aircraft on the hangar deck. The taxi director blew his whistle, chocks were thrown under the wheels, and an attempt to attach tiedown chains all proved futile. The *Tomcat* came to rest with its radome in the intake of another aircraft.

Prevention: This type mishap occurred aboard ship when respotting and ship maneuvering were simultaneous. Communication and cooperation between all departments and the bridge are imperative if these type of mishaps are to be stopped.

Attack. The *Skyhawk* was being towed to the refueling pits by a qualified and licensed driver and brakerider. An unscheduled "shortcut" through the adjacent transport line was the route selected by the crew. A C-130 was being loaded for the next day's mission. All running lights were "on," and the A-4 crew thought they could make it under the *Hercules'* wing. The vertical fin/avionics package of the *Skyhawk* contacted the 130's wing fuel cell and spilled 700 gallons onto the ramp, not to mention damage to both aircraft.

Prevention: Shortcuts and assumptions generally end in mishaps. Follow prescribed routes and stick to SOPs. Plan and practice safe procedures. There are no shortcuts to safety.

ASW. The *Viking* was towed to the pits for refueling, and the brakerider debarked and returned to the line. He didn't tell the director that he was leaving, nor did he inform anyone that the S-3's brakes were weak due to a low accumulator. Assuming that the brakerider was still in the cockpit, the aircraft was towed back to the line. En route, the tow tractor driver pulled away from his wingwalkers. He noticed his error and slowed down. Too fast; the towbar disengaged the nosewheel. The S-3 was on its own! The director ran and caught up with the unmanned *Viking*, jumped in, tried to pump the brakes to stop the aircraft, but it was too late. The S-3 caught up with the towbar and tractor. Crunch!

Prevention: Assumptions plus aircraft discrepancies (unknown to all) and excessive ramp speed result in mishaps again and again. Good, solid communications could have prevented this one. Before starting an evolution, check to see if everyone is in his proper place and understands the game plan.

Training. The *Buckeye* was being utilized for ground towing practice without permission from maintenance control. A novice plane captain was at the helm of the tractor, accompanied by two wingwalkers, a brakerider, and a qualified taxi director. Prior to reaching their final parking slot, the driver flagged down a passing mobile canteen. Signaling the director to man the tractor, she disembarked and went to the mobile canteen. Unable to complete the switch in time, the T-2 continued to roll. It came to rest with its tip tank in the service window of the mobile canteen.

Prevention: Unauthorized use of vehicles is and has always been a no-no. Interrupted plans and changes of thought usually lead to accidents. Last-minute "things to do" like the above could have cost this unit an airplane and several lives. If you have to stop a vehicle or aircraft, ensure that it's chocked. Also ensure that unauthorized vehicles are not allowed in aircraft areas.

AEW. During low-power turnup, the aviation mechanic misunderstood the plane captain's signal and spread the *Hawkeye's* wings into an adjacent NC-10.

Prevention: Ensure that all personnel are qualified to perform certain evolutions and that *they really* understand NATOPS signals.

The examples above all happened in CY-78. They could have been prevented as could the majority of the 727 reported ones. Your unit may have had similar mishaps. Some were prevented through good, solid safety programs. Commonsense, sound judgment, and supervision of personnel and programs win out time after time over the unplanned, unauthorized, and unqualified play-it-by-ear approach. Pick an arbitrary percentage reduction and set your unit's goal for its aviation-ground mishap rate in '79. Chances are you'll better it if you follow the rules.

Middle age is the destiny that ends our shapes.

Ace L.

ATTENTION ON DECK!

A *PHANTOM* on No. 3 elevator was lowered to hangar deck level during heavy seas. As the F-4 was halfway into the hangar bay, the ship rolled heavily to port, pitching the bow up, thus causing the aircraft to slide aft and back out the hangar bay doors. Emergency brakes were applied and chockwalkers threw chocks under the mainmounts, but the F-4 and spotting dolly continued to slide toward the elevator's edge! AD3 Steven P. Applebee grabbed a nearby tiedown chain and hooked one end to the nose gear tiedown and the other end to the nearest padeye. The chain took the strain and stopped the *Phantom* before any damage or loss of aircraft could occur.

Later, another F-4 was being pulled from the No. 3 elevator to the flight deck for respot. As the tractor pulled the aircraft off the elevator and turned left toward the bow, the towbar separated from the nosewheel, leaving the F-4 free on the rainswept, pitching deck! Emergency brake application by the brake rider, AMH3 Russel E. Kelley, Jr., could not stop the sliding *Phantom.* Airman Kelley had the presence of mind to meter the air to allow the tires to obtain traction. He stopped the aircraft's movement long enough for the blueshirts to chock and chain it until a different towbar could be attached, thereby saving another valuable aircraft.

The positive and knowledgeable actions of these two alert sailors under extreme and difficult conditions are to be commended by all. Well done, Petty Officers Applebee and Kelley of VF-151.

Is NATOPS needed for Navy/Marine Corps flying clubs?

EARLY one summer afternoon a Navy aero flying club member launched in a single-engine light airplane for a local VFR flight from NAS Southwest. Along was a fellow navyman on his first light airplane flight. The pilot climbed to altitude (8000 feet) and decided to demonstrate engine-out characteristics to his passenger. Feeling highly qualified with over 250 total hours, of which 50 were in-type, he secured the necessary switches, and as advertised – the engine quit. After a prolonged glide, attempts to restart the engine proved futile. The pilot set himself up for a "deadstick" landing on the beach 2000 feet below. Fortunately, for all concerned, the landing and rollout were uneventful. The pilot was arrested by local police and fined for reckless conduct. He later had to pay for the towing charges from the beach to a local civilian airport. Quite an experience, particularly for the passenger just "along for the ride."

Although this flight was just an incident, it was later found that the local aero club's procedures were either deficient or nonexistent. Of particular note were the following:

- The light airplane had previously been "downed" for maintenance, but no discrepancies were noted in the log.
- The pilot didn't know that the airplane was in a "down" status prior to his flight.
- The pilot's status in the club was uncertain.
- The pilot never flew an in-type check with a CFI (Certified Flight Instructor).
- The pilot was not aware of the proximity of the civilian field beneath him.
- The pilot didn't realize the effects that extended glide had on the engine's cylinder head temperature and fuel system, particularly on restart performance.
- Prior pilot's performance was often noted as non-professional. In times past he had secured radios and shot touch-and-goes without radio contact with the tower.
- The aero club's bylaws were not specific on membership nor maintenance policies and procedures.

It becomes quite apparent that the aero club in this case was well in need of an overhaul of its SOP – if it had one at all. Perhaps all aero clubs should have SOPs similar to NATOPS covering general as well as specific type operations. Granted, some clubs may have excellent SOPs, but it's obvious that all do not. Too often clubs may get involved with flight operations and neglect the administrative portions that govern safe flight. Is it time for *your* aero club to update *its* SOP?

No sooner than this story went to press, a Marine aero club airplane from MCAS WESTPAC landed near a beach and sank. – Ed.

BRAVO ZULU

Capt Mark C. Thoman
1stLt Bruce D. Devers
Cpl Stephen P. Kincaid
HMT-204

Capt Mark Thoman and his crew, 1stLt Bruce Devers and Cpl Stephen Kincaid, were returning from a weekend, training cross-country in a CH-46F. With the copilot at the controls, they were cruising at 4000 feet on an IFR flight plan and were in contact with Washington Center.

Without warning the helicopter pitched 45 degrees noseup and rolled to the right. As Capt Thoman assumed the controls, a shudder was felt throughout the airframe, and the one-to-one vertical beat that followed was so violent that the crew was unable to read any cockpit gage indications. Capt Thoman countered the pitchup with full forward cyclic, and the helicopter snapped to an attitude 45 degrees nose low and rolled 60 degrees to the left – completely out of control. Despite the wild oscillations of the helicopter, Capt Thoman was able to prevent the aircraft from rolling inverted by using full deflection of the flight controls and beginning a descent. On request from the aircraft commander, 1stLt Devers was able to select the Stability Augmentation System and the Automatic Trim Systems off, but neither seemed to affect the controllability of the helicopter. A Mayday report was made to Center, and the crew chief and passengers made preparations for a hard landing.

At approximately 500 feet, Capt Thoman regained enough control to initiate a turn toward a plowed field, and a nose-high flare was established. Touchdown was accomplished at about 90 knots, and when forward motion ceased, the engines were secured, rotor brake engaged, and all crew and passengers disembarked without injury.

Preliminary investigation revealed separation of the forward longitudinal cyclic trim actuator, rendering the forward rotor almost completely uncontrollable. Total time from initial failure to landing was approximately 1 minute and 45 seconds.

Capt Thoman and 1stLt Devers' prompt reactions and superior airmanship prevented a major aircraft accident and saved the lives of the passengers and crew.

Well done! ◄

In the Black of the Night

NIGHT dipping for helicopter ASW crews has to be one of the most demanding evolutions in aviation. It kind of reminds one of balancing on a needlepoint, one little move either way and off you go, or to bring the analogy closer to home, one cough of an engine and you get wet.

A crew was assigned a combination plane guard/ASW mission one night. After briefing they launched on time for a scheduled 4-hour flight. They remained in the delta pattern for about 45 minutes, until all the fixed-wing were safely aboard the carrier. Then they departed for an area about 35 miles away to do their ASW work.

The HAC had a little difficulty establishing contact with the controlling agency as he neared the area. However, contact was finally made and a clearance to relieve the on-station aircraft was given. The HAC descended to 150 feet and the alternate approach checklist was completed. The helicopter pilot leaving station gave datum to the approaching HAC. When on the scene the HAC entered a normal dip and began tracking a friendly target.

After the first few minutes of tracking, the HAC called for the dome to be raised, departed the hover, and repositioned the helicopter. He began another approach and visually acquired the sub. He flew across the sub and entered a second sonar hover. Seconds later, a loud buzzing was heard, airframe vibrations began, and a shower of sparks from the No. 1 engine lit up the night. The helicopter began a rapid descent.

The HAC froze the collective, told the crew they were going in, the copilot put out a Mayday, and the helicopter hit the water firmly, but not hard, in a level attitude. The HAC raised the collective, retarded the speed selectors, and applied the rotor brake to avoid a blade strike with the water.

The helicopter submerged slightly, up to the bottom of the windshield, but then rose and floated slightly nose low. The sea was calm with 5-foot swells and winds of about 10 knots. The pilots' windows were jettisoned and the copilot flicked on the overhead white light so they could see. All items on the jettison panel were deep-sixed and the gear was lowered.

The copilot put his PRC-90 to good use and established contact with other helos in the area. The HAC left the cockpit to check on the crew and the watertight integrity of the helicopter. The crewmen were OK and the helo was dry. The HAC ordered one of the crewmen to deploy a MK-7 liferaft just in case it would be needed. The crewman had to enter the water to inflate the raft, and after some initial difficulty, got it inflated. By the time the raft was ready for occupancy, it had drifted 50 yards away. The crewman had climbed into it.

Meanwhile, back in the cockpit, the HAC and copilot

began dumping fuel to lighten the helicopter. The copilot said, "Let's see if we can start the engines." The HAC agreed. They tried No. 1 first but were unsuccessful. Number 2 engine was then started and it ran for about 1 minute. However, it flamed out and despite many more attempts it could not be restarted.

When the water level rose above the sponson, the HAC and copilot decided it was time to abandon the helo. They moved aft, inflated their one-man rafts, and with the remaining crewman, jumped into the water. Within 10 minutes all survivors were picked up. They were returned to the carrier. The abandoned *Sea King* stayed afloat for another 30-45 minutes and then sank in water over 2 miles deep.

Most helicopter ASW pilots, if asked what one emergency is uppermost in their minds, would say a single-engine in a night dip. Taking this another step along the garden path we can assume that helicopter ASW pilots have played the "what if" game many times over. Obviously the primary thought, *first and foremost,* has to be the safety of the crew.

The action taken by pilots after a successful ditching varies with the number of pilots who have been in this situation. Safety Center records reveal that some pilots were programmed to get out with not much thought of anything else. Other pilots are on record stating that once in the water they didn't want to risk a single-engine takeoff in a sick bird. Then there are some pilots who dislike water so much they'll do anything or try anything to get airborne, or water taxi, or do what they can to keep their crippled bird from making like a submarine.

There is no way that any second-guesser could say what course of action a pilot took was either right or wrong. There are too many variables, and it's highly improbable the same conditions existed for any two ditchings. However, one can't help rooting for the pilot who won't give up as long as the helicopter floats, in a reasonable sea state.

We would be interested in hearing from pilots who have ditched. Let us know why you ditched, the conditions which existed, and the courses of action taken. (See the masthead for the Editor's address and zip.) ◄

Jerk from Irk and

By LT Lawrence H. Frank, MSC, USN
Aeromedical Safety Operations
COMNAVAIRPAC, San Diego

STARDATE: 3750.6. This is the voyage of the Starship Inquiry. Our 5-year mission is to investigate the advancement of Earthling airships. Although this species called humans appear to have a rapidly developing technology of air travel, we have noted a high incidence of what Earthlings call "aircraft accidents." Our studies have revealed that relatively few of these accidents are due to structural failure. These airships may be crude, but they are solidly built.

The Director of the Universe Metaphysical Bureau (DUMB) determined that it was necessary to make contact with the Earthlings in order to better understand the reasons for their airship accidents. Consequently, I, Jerk from the planet IRK, was selected for this mission. It was decided that I should make contact with someone who was both knowledgeable of human behavior and aviation. First, I tried to contact a Navy flight surgeon, but it was a weekday and all the flight surgeons were out playing golf (this is a game where Earthlings try to hit little round objects with sticks into holes and – oh, forget it – I'll try to explain this game in a later report).

Undaunted by my failure to locate a flight surgeon, I continued my search until I spotted an unusually large sign on an office door. This sign could be easily seen from 50 feet and read: Dr. Sigmund, The Flying Shrink. I immediately decided that this obviously egotistical flying shrink could assist me in my mission. When I entered his office, Dr. Sigmund had his back to me and was slumped over his desk making gross rasping noises. Worried that he was ill, I oozed over to his desk and shook him by the shoulder (I must say that the feel of an Earthling made my scales flap – yech!) Upon shaking him, he immediately jumped up and screamed. He was quite mad and was mumbling something about it not yet being time for his wakeup call (strange). He then turned around and took his first look at me and began to scream again. I silenced him with the sssh-ray, explained to him my mission, and told him not to be afraid.

The following dialogue was transcribed from a recording made with my sixth toe:

The Flying Shrink

Dr. S: Whaaat . . . whoo . . . whaa . . .

JERK: Please, Doctor, do not be afraid. I only want to ask you a few questions.

DR. S: Don't be afraid! What do you mean, don't be afraid? It's only natural to be afraid of someone who has three eyes – all of which are on the left side of his face – and scales, and is a powder-puff blue color.

JERK: If you only knew how repulsive you look to me, Dr. Sigmund.

DR. S: OK, OK. If I answer your questions, do you promise not to hurt me?

JERK: I only want answers for my report. Please relax.

DR. S: All right, ask away.

JERK: Why are there so many skyship accidents? Are you Earthlings clumsy?

DR. S: Skyships? Oh, you mean aircraft. Well, there is no simple answer. There are several reasons for aircraft accidents.

JERK: Please elaborate.

DR. S: Historically, the man-machine interface has proved a major problem. In the early days of aviation, there was little human factor engineering. In fact, it wasn't until WWII that people became aware of the necessity of a concerted human factors effort.

JERK: What is human factors engineering?

DR. S: Let me put it this way. Machines can be designed to facilitate man's performance, or, if the machine is designed poorly, it can distract from his performance. Poor design can cause man to make costly mistakes. Human factors engineering is simply the study of the way man and machine interact, and how to best design the machine or workspace to be compatible with man's abilities.

JERK: So, poor human factors engineering can cause an accident.

DR. S: Exactly.

JERK: Are all the human factors problems identified?

DR. S: Oh, by all means, no. We have a fairly good handle on these problems, and have worked hard to be sure that there is a man-machine interface compatibility, but there are still problems that we have not yet identified.

JERK: What are the difficulties in identifying these problems?

DR. S: Believe it or not, the biggest problem is the Naval aviators' "can-do" attitude. These guys don't like to complain or admit that they are having a problem with anything. If they would just get together and say, for example: "Hey, I have a problem in trying to switch radio frequencies. I have to bend my arm like a pretzel to reach the dial and then I can't see what is dialed in. Does anyone else have this problem?" They would probably find out that everyone is having the same problem as they are. They could send in a UR and get the problem corrected.

JERK: You Earthlings are peculiar. Are there any other causes of accidents?

DR. S: Would you please take your leg out of your nose, it's rather distracting.

JERK: That's not my nose, it's my ear. But I will remove it if it will make you feel better.

DR. S: Yes, thank you. Another cause of accidents is self-medication. Again, this goes back to the pilots' "can-do" attitude, and their aggressiveness (ask any woman at the club "readyroom" at happy hour). If they have a cold, headache, or a sinus problem, they won't go to the flight surgeon. They don't want to admit that they are not supermen and they don't want to be grounded. So, to avoid being grounded, or admit that they are not 100 percent, they self-medicate.

JERK: Aren't there rules against such behavior?

DR. S: Sure! The general NATOPS forbids the use of any drugs, including over-the-counter drugs, without the approval of a flight surgeon, AME, or AMO. But the aircrews just do not realize the dangers involved. For example, taking antihistamines or decongestants can cause drowsiness, reduced

alertness, altered depth perception, interference with vestibular apparatus performance, and reduced perceptual motor skill proficiency. If you are not supposed to drive an automobile when using these drugs, you can imagine the potential consequences of flying and self-medicating.

Another factor that most aircrewmen are unaware of is the cumulative effect over days of self-medicating. For example, there is a current nasal decongestant on the market that you take every 12 hours, but the drug contained in this capsule is not cleared from the body until *at least* 48 hours later. By taking this over-the-counter drug every 12 hours (as recommended) over a 5-day period, you will end up with over four times the therapeutic dosage of the drug in your system. The pilot just falls asleep and it is all over with. In fact, there was an aircraft crash a couple of years ago in which this is exactly what happened.

JERK: It is hard to believe that Earthlings are stupid enough to do things such as that.

DR. S: It sure is.

JERK: Are these the only drugs?

DR. S: Oh, no, there are several over-the-counter drugs we could talk about. The most common drugs, however, are alcohol, nicotine, and caffeine. Most aircrews are aware of the compromising effects of these drugs, but they overlook them and think that it won't happen to them.

JERK: In my observations of you Earthlings, I have noted strange behavior. The other day I went to a football game. There was fierce animal aggression, abusive language, wild chanting – and that was just in the parking lot. Do emotions play a part in your aircraft accidents?

DR. S: Boy, do they ever! Obviously, every human being is at some level of emotion. It is impossible to talk about accidents attributable to one particular emotion such as hate or fear. But we have found that a major contributor to accidents is preoccupation. A person performing a complex task, such as hovering a helo, can not do well at that task if he is thinking about something else. Personal problems distract from a man's performance.

If a person is "off his job" because he is preoccupied with his father going in for heart surgery, it is widely understood by everyone. But a person can also be preoccupied about something that is not a problem.

JERK: You confuse me, Doctor. Do you mean that something that is not a problem, but a good event in an Earthling's life, can cause preoccupation?

DR. S: Yep. The guy who is thinking about the new car he is going to pick up after work, or that long-

desired fishing trip he is going to take next week, can be just as preoccupied as that individual worried about his father's heart surgery. Often, the pilot who is preoccupied can fly his aircraft on a routine mission through old habit patterns but, if he has an emergency, he may not be able to handle the added stress. Consequently, he may not react quickly and/or accurately to the emergency. The end result of this scenario is, more often than not, an accident.

JERK: I have often heard it said among your species, that with age comes wisdom. Is this true?

DR. S: Not necessarily so. As CAPT Frank E. Dully, Jr., a well-known flight surgeon, has remarked, "Earthlings, especially the more senior they get, have remarkable ability to harp on others to observe the NATOPS rules, but have an equally remarkable propensity for deciding, at any given time, to issue themselves a temporary waiver from those rules. Curiously, the smarter and more adept the Earthling, the more likely he is to so exempt himself, frequently drawing public scrutiny of his unsmartness, as demonstrated by a broken airplane."

JERK: If you know all these factors contribute towards accidents, why haven't you Earthlings stopped having accidents?

DR. S: Because – why are you eating my cactus? And the pot, too?

JERK: It helps my digestion. Now about my question.

DR. S: Err, yes. Although we can sit here and discuss, after the fact, those items that contribute towards aircraft accidents, it is not always that easy to see them before the accident.

JERK: What can be done?

DR. S: Educating everyone in the aviation community, about the things that we have been talking about, is the best approach. When it comes to self-medication, it is the responsibility of the individual not to self-medicate. In terms of preoccupation, it is everyone's responsibility. If we could just get everyone to watch out for the other guy, we would greatly reduce aircraft accidents. Accidents usually result from an accumulation of a number of small events, all occurring at one moment in time.

JERK: Thank you for your time, Doctor. I believe that I have enough for my report.

DR. S: Glad to help. And don't worry about my mentioning to anyone else that you were here. It's embarrassing for a psychologist to have to see a psychologist.

FINAL COMMENTS TO "DUMB"

Sir:

Enclosed you will find my final report on the alien airship accidents. The information that was obtained from the flying shrink, Dr. Sigmund, is believed to be accurate. When I left his office, I noted that he was giving his goldfish a bath. How could you fail to have confidence in an Earthling like that?

Choochoo,
Jerk from IRK

you just blew up!

By LTJG Larry Hurst
VA-46

GORY stories are endless, and they continue to be written in the form of accidents and incidents involving aviation ordnance. The main reason for these unfortunate occurrences is that the individuals involved forgot or ignored the written procedures for handling ordnance.

For example:

• **A Naval facility.** A crew of seven enlisted men were lowering bombs. Some bombs in slings were allowed to swing freely by a careless worker. Bombs bumped into each other as the ordnance was lowered too rapidly. An explosion occurred and all seven men were literally blown to bits.

• **At sea.** An ammunition ship was taking on ordnance. Bombs were being lowered on hoists in the stowage hold. One banged against the side of the hold, and the results were almost beyond belief. Bombs, rockets, and fragments were hurled for a radius of a full mile. Thirty-six ships were heavily damaged or completely destroyed. Three hundred and eighty-three men were killed and more than 400 were injured.

These two mishaps happened decades ago, but the fact remains – *safe procedures were not being followed.*

One special case that affects all of us in this peacetime environment is use of practice bombs – and don't let the name fool you. The most dangerous bombs in the United States' arsenal today are practice bombs. When the explosive component is put into them, they become extremely hazardous because there are virtually no safety devices. Too many ordnance types have fallen prey to the lure of careless practice bomb handling. The most common in our daily flight routine is the MK-76 (25-pound practice bomb). This little jewel of a bomb can, if not handled properly, maim, blind, or even kill the careless ordnanceman. It only takes a fall of 2 or 3 feet to ruin a career or lose a life.

No one knows the number of accidents that a short refresher course prevents, but it has been proven that a little extracurricular review will prevent a lot of unnecessary accidents.

While we're on the subject of ordnance, let's talk about collecting ordnance as souvenirs. No matter how much an individual knows about ordnance, collecting a souvenir is *no* hobby. There are just too many stories about sailors who wanted "war-stuff" souvenirs – but who lost fingers, limbs, eyes, and lives.

An old philosopher once said, "I think, therefore I am," which, in the case of an ordnanceman, could mean "I didn't think, therefore I *was*."

FLIGHT DECK HAZARDS

By LT Steve Kunkle
VA-46

MUCH has been said and written about all facets of deck safety. Jet intakes, tailpipes, hooks, props, helo rotors, etc. have all been the target of uncounted remarks on their hazards to life and limb. Another area which hasn't had much publicity is the arresting gear and landing area.

Everyone knows that you are supposed to stay clear of the landing area when the recovery is in progress. But there are some very insidious hazards which still exist when we land aircraft.

In a recent incident on a carrier, an A-6 landed right of centerline and his starboard wing tip struck the crash truck which was parked clear of the foul line! Two people were seriously injured. During an ORE, an F-14 was lost when the No. 4 wire broke upon landing. In a most publicized incident an F-14 went over the side because of uncommanded engine acceleration.

The point is that nowhere on the flight deck can you be 100 percent safe. If a cable breaks, or an aircraft strikes the ramp, or loses its brakes, the foul line is not an imaginary force field behind which you can hide.

To turn your back on an airplane in the groove, or to lounge near the arresting cables or in the catwalk, just to watch the show and enjoy a sunny day is akin to playing Russian Roulette.

Most of us have jobs that require us to work on the flight deck from time to time. But too often there are many people who don't need to be there. The right number of people is the number that can be found when it's raining so hard you can't see the bow and there are 50 knots of wind over the deck.

I don't mean to discourage anyone from watching the launches and recoveries, but the flight deck and catwalks are not the places for sightseeing. Go up to Vulture's Row, or contact one of the LSOs and arrange to see a recovery from the LSO platform.

One final point. Sometimes there may be several minutes between aircraft during a recovery. Don't assume the recovery is complete until the boss says so on the 5MC. Then you have to watch out for the helos. Remember, the one you don't see is the one that'll get you. Keep it safe and let's all be around to enjoy the standdown. ◄

During the first 6-month period of CY-78, 11 percent of all overwater ejections culminated in drownings. If you add to these drownings those incidents which were categorized as either possible or probable drownings (viz., blossomed parachute sighted or man seen alive in water but not recovered), the statistics jump to 15 percent! Think about that. Fifteen percent. One out of seven ejections ended in a drowning fatality!

The Psychology of Water Survival

Only survivors do it again

By LT M. J. Pianka (MSC), USN
COMNAVAIRLANT
and
LT L. H. Frank (MSC), USN
COMNAVAIRPAC

INDEED, the above statistics are alarming. But, why are they so high? Faulty equipment? Maybe. Inadequate training? Probably not, but in some instances, yes. (Aircrewmembers are required to go through water survival training every 3 years.) However, water survival under adverse conditions depends on more than equipment and training. It also depends upon several psychophysiological variables that can either contribute to or prevent your survival. By understanding these variables and employing some basic psychological principles that follow, your chances of survival should be greatly enhanced.

For example, the time interval between full parachute blossom at 2000 feet AGL until you enter the water is approximately 100 seconds. A little over a minute and a half. If you were forced to eject due to a cold cat shot or a bolter, you would be lucky to get one complete swing under the canopy before water entry. Time is critical no matter how you slice the pie. Reflexively, you have to inflate your LPA, deploy your seat pan, release your Koch fittings, avoid shroudline entanglement, and, finally, enter your raft. Failure to perform any of these actions could spell disaster if not carried out properly. Just how well each individual reacts under ejection conditions depends a lot upon the amount of stress placed on the individual. For a long time, psychologists have known that human performance of a task is related to the amount of psychophysiological stress on an individual.

There are numerous kinds of stress and stressors. From the usual bent-wing phenomena to the night carrier landing, the word "stress" applies to strain and/or pressure. In the mechanical sense, stress is a physical attribute that can be measured, accounted for, and, hopefully, avoided. But what about psychological and physiological stress? When we subject our body and psyche to stress, things are not as predictable. There are insidious stressors operating on us all the time. For example, consider state of health, fatigue, financial or marital problems, to name a few. In some instances it is possible to point to something and say, "Aha! This is a stressor!" Like when a parent or spouse dies or is severely injured or a divorce is occurring. These are definite stressors. Any of these types of events decrease your resistance to additional stress, i.e., an inflight emergency.

Too often, however, the person under stress is the worst judge of his/her own limits. Remember the old saying, "There are old pilots and there are bold pilots, but there

are no old, bold pilots." In some respects, this can apply to stress since the "old" pilots are usually the ones who know their own limits and seldom, if ever, exceed them. On the other hand, the "bold" pilots are those who usually think: 1) that accidents only happen to the other guy; 2) that they're better than they actually are; or 3) that some bit of information about an emergency or survival situation does not really concern them. Then there are those who combine a little of all three of the above. These are the "fools"; the accidents waiting to happen. They are not the true professionals required in today's aviation environment.

The pro is really someone who constantly reviews NATOPS, not because he is required to take the duty test the next day, but because his life may depend on it. Not only is he mentally ready, he is physically ready through a solid physical conditioning program. He recognizes his own capabilities and limitations as well as his machine's. He constantly tries to protect against the improbable. All too often, the presence of psychophysiological stresses are not uncovered until after the accident has occurred.

Let's consider the type stress caused by an ejection scenario. This includes the emergency that caused the ejection and the survival situation that follows. The former has a real and direct impact on the latter. The human body and psyche have definite limits which, when exceeded, may lead to death. In the approach to death, performance shows a rapidly accelerating deterioration after reaching a marked peak. Any time you operate beyond the optimum level (peak), your performance suffers.

Consider the emergency that leads you to the ejection decision. Probably you will be reacting somewhere near the optimum level (we hope). When you eject, your arousal increases more and your performance begins to suffer. Once in the water, you are truly beyond your peak performance, and your immediate survival is going to be dependent on how well rehearsed you are with your water survival procedures. An interesting point here is the difference between *reflexive* versus *reflective* responses to the situation. Beyond the peak performance area, *reflective* (i.e., thinking) behavior suffers the most. *Reflexive* (i.e., instinctive) behavior suffers least and is the best reason for constant training, with actual hands-on training, to ensure correct and timely response in any emergency situation. Each water entry episode should be treated as a package. That is, one should plan, rehearse, and train for a complete water survival situation. That means going through the whole thing without considering a firm rescue time.

So go ahead and plan for a long-term survival situation and do everything required as expeditiously as possible. The whole ejection sequence scenario will take its toll on you, and exhaustion will set in rapidly. You need to have everything accomplished before this happens to optimize your chances of personal survival. Don't relax until you are safely aboard your raft with URT-33 turned off, flares/smoke and PRC-90 handy and ready to use when the time comes. Then relax, have a drink of water (fresh), and regroup your thoughts while awaiting rescue.

The odds are in your favor that you'll be picked up within the first hour. However, don't plan on it. Be prepared mentally for a long-time survival situation in the water. The single most important aspect of your mental preparedness is *confidence*. Be confident that you have done everything possible to enhance your survival odds and that you can "hack it" no matter how long rescue takes. Be prepared to eat seaweed, raw fish, or seagull. Think back to your DWEST training on how to get fresh water after your emergency supply has been depleted. Don't start rationing! Your body needs to recover from the great stress that you have encountered, so drink your water, eat your candy, relax, and take stock of your situation. Help is on the way.

The big thing to remember in any water survival situation is that you are on your own and have to rely on your own resources in order to survive. How well you react will be dependent on how much thought, review, and training you have put into your past. The first time you eject should not be a training experience, rather a predetermined, well-rehearsed set of responses that maximize your survival chances. Actually, confidence of appropriate individual action has never been a real problem for most aviators. However, this may not always apply to every situation that you find yourself in. Nothing is as disheartening as trying to remember what to do next when next has already passed and gone! Aviation and survival both require almost automatic and timely responses in a sequential order. Often, an omission of a single item (e.g., lowering landing gear) can have embarrassing or disastrous results. To prevent this possibility, know what to do, how to do it, when to do it – then DO IT! ◄

The main rule in skydiving is to never argue with your wife when she's packing your parachute.

Ace L.

GROUP GROPE ON A BINGO

By CDR W. R. Needham
CO, VA-65

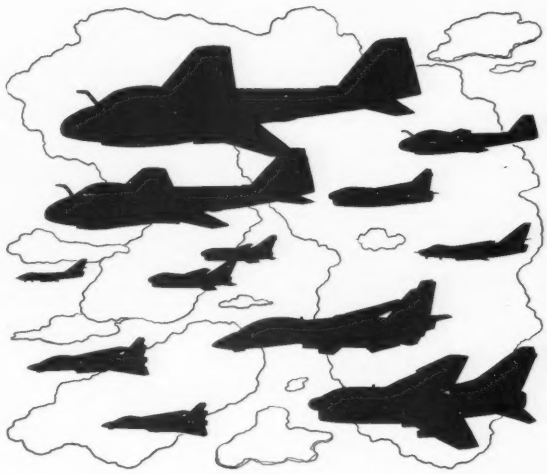
THE 1945 cycle aboard USS BOAT was scheduled to end with a normal Case III recovery. The event, which included three A-6s, four A-7s, three F-14s, one S-3, one E-2, and two tankers, consisted of independent night bombing sorties for the attack aircraft (inert Mk-82s) against Island target, 125 miles to the south of the ship. The weather at the ship was clear and 7, but the moon did not rise until well after midnight, and a high haze layer made it a very dark night.

The 2115 launch, delayed by a combination of aircraft and flight deck problems, had been strung out for over 35 minutes, so even the best of fuel planning on the part of the recovering aircraft had begun to give way to the unexpected extra flight time. As the first aircraft finally approached the ramp, a fouled deck caused one after another to be waved off. Soon there were six aircraft going 'round and 'round in the pattern. Several "Delta Sixes" later for those aircraft still in Marshal, and after repeated attempts at the deck for those in the pattern, the ship realized they were not going to be able to recover the event. The decision was made to bingo all the tactical jet aircraft to NAS Bingo Field some 135 miles away. The S-3 and E-2 would double cycle and recover with the next event.

At this point there were 12 aircraft departing the vicinity of USS BOAT. Most of these aircraft were close to their prescribed bingo fuel states – one had even declared emergency fuel! Shortly after the bingo signal was given, Southern Center was deluged with individual calls from 12 different aircraft at various airspeeds and altitudes – all heading for the same destination. Confusion threatened to turn the situation into a disaster. However, cooler heads prevailed and Center responded under pressure, sorting out the jumble of information they had been given and helping convert a potential disaster into an orderly, professional evolution.

NAS Bingo Field had no precision radar, and the only TACAN approach commenced 40 nm on the other side of the field. Fortunately, the weather at the field was VFR, and even though they were basically unprepared for the large number of aircraft, the landing phase went extremely well. All aircraft arrived on deck safely. Signal bingo had been successfully completed.

The preceding scenario ended safely, but it had a potential for disaster that could have developed quickly. An obvious danger that exists with that many aircraft in the same general airspace, at the same time, all going to the same place, is the possibility of a midair collision. Aircrews concerned with low fuel states tend to become very "cockpit oriented," and a good lookout doctrine can become almost nonexistent. Another obvious but often overlooked point is the requirement to fly the bingo profile when on a legitimate bingo. Bingo information is calculated for each type aircraft, and is accurate. Aircrews that stop short of bingo altitudes or that do not fly the designated airspeeds are asking for trouble.



There are, of course, other problems that can arise during a bingo – unexpected events which can endanger both aircraft and lives. For example, suppose that the aircraft landing in front of you takes the gear and closes the field for 15 minutes. What if weather at the divert field is such that a VFR entry is not a viable option? The question of available facilities at the field can then become an issue. If a bingo situation arises overseas, a simple thing like whether or not English is spoken in the tower can become important. These are the type of things that need to be considered before you go flying. You must know what you are going to do if . . .

The bottom line in a bingo situation is like that in any other area of aviation. You must be prepared for as many contingencies as possible. Expect the unexpected. Consider all those things which can affect your decision if the situation arises. Your life may depend on it! ◄

Airfield Profile No: 8

MCAS Cherry Point (NKT)

IF you've been there, you know about the good liberty spots, big city atmosphere, and all the modern conveniences it offers! If you are the itinerant aviator looking for a place to "gas-and-go" or a suitable divert field, you should find this aviator's mecca to your liking. APPROACH would like to take you on a tour of NKT in hopes that it will make your next stop an enjoyable and safe one.

The Airfield. MCAS Cherry Point (Cunningham Field) is the home of the 2nd Marine Aircraft Wing and part of its over 450 tactical and support aircraft of all types. You will find fixed-wing jets, helicopters, transports, and the latest in aviation, the VSTOL wonders of the Corps – the *Harriers.* So if you are looking for a rest or refueling spot while flying along the East Coast, Cherry Point can provide you with some of the best facilities this side of the "Sippi."

This airfield is located approximately halfway between NAS Key West, FL and Loring AFB, ME. It offers very large runways, hot-refueling pits, and a modern snackbar at Base Ops that is convenient to all that transit the Point. The field elevation is but 29 feet MSL with very few obstructions any higher than the local water towers (occasionally you'll find various types of fowl transiting the area as they migrate south on unfiled flight plans). If your aircraft has the modern navaids such as doppler, digital, or some other RNAV aboard, dial in latitude 34°-54'N and longitude 76°-53'W, and upon your ETA you should be over the world's largest Marine Corps air station, Cherry Point. Normal operating hours of the airfield are: 0700-2300 on Monday-Friday, 0800-1600 on Saturday, and 1200-2000 on Sunday (all times local). The field is officially closed at other times.

Facilities. MCAS Cherry Point has the capability of handling just about any type aircraft up to and including the giant C-5A *Galaxy.* Fuel, oil, and oxygen are available as listed in the current edition of the IFR Enroute Supplement. Limited hangar space and transient maintenance is available during normal operating hours. Complete weather service is provided, including METRO on 344.6MHz. Use of METRO is encouraged, as the weather around the Point will change without notice at any time during the year. Follow-me vehicles, hot brake, high-power turnup, and compass rose areas are available for those in need. Base Ops frequency is 306.6MHz, located in Flight Clearance, and can be used to coordinate VIP arrivals, request for services, etc. Complete crash and rescue facilities are always available during airfield operating hours (30 minutes notice required at other times).

Runways. The four intersecting runways (5/23, 14/32) at NKT provide a minimum of 8000 feet for takeoff and landing. The "jog" intersects the four runways amidfield. All runways are 400 feet wide and have from 100 to 1600 feet of hardpacked earth overrun which is capable of supporting most tactical aircraft under normal conditions. Runway 19 is not active and is used for transport staging and helo practice landings only. Runway 1/19 has adjacent *Harrier* landing pads which are used simultaneously with normal operations.

ATC (Air Traffic Control) Procedures. All flights in and out of Cherry Point are encouraged to use IFR handling. VFR procedures may be utilized when conditions warrant and are requested.

ATC training is continuous in the tower and Approach Control. Qualified controllers are always monitoring students undergoing training. Only qualified controllers are working during IFR conditions. Requests for multiple approaches are encouraged and will be granted if traffic permits.

The tower controls all VFR traffic within 5 nm of the field and up to but not including 3000 feet. All taxiing aircraft and vehicular traffic are under positive control of the tower. Taxi clearance may be obtained from ground control/tower (VFR).

Cherry Point Approach Control has five functional areas of responsibility: Approach Control, Feeder Control, Final Control, Departure Control, and Clearance Delivery. Cherry Approach controls all traffic into and out of the Restricted Areas that surround the airfield. Additionally, it controls traffic into and out of MCAS(H) New River, New Bern, and Beaufort (NC) municipal airports. Through the use of microwave relay, personnel at NKT are able to control IFR traffic into and out of New River. This also applies to UHF/VHF communications between the two air stations. No longer must pilots experience long delays awaiting their clearances at New River.

PAR/ASR approaches are available and encouraged at Cherry Point. Notify Approach as to the type desired, and traffic/weather permitting, they will oblige the request. The primary instrument runway at the Point is 32 for planning purposes and lost comm (NORDO) procedures.

Flight plans are a must when operating out of Cherry Point. In addition to the standard DD-175s required for all point-to-point and roundrobin flights, there are stereotype flight plans, local IFR-VFR flight plans, and provisions for carrier flight plans. Consult the Ops duty officer for assistance if needed.

Jet flights arriving VFR should contact the tower prior to reaching the "initial." "Initial" for all runways is an imaginary point 5 nm from the extended centerline at 2000 MSL. A descent from the "initial" to reach the "numbers" at 1500 feet is required with further descent to 1000 feet on downwind leg. Prop flights should enter downwind at 1500 outside of the normal jet pattern. Straight-in approaches may be requested and granted, traffic permitting. Caution is imperative during all VFR approaches as GCAs, hung ordnance, straight-in, and overhead traffic are frequently in proximity at 8 nm from the duty. Helo traffic is instructed to contact the tower prior to 5 nm at or below 500 feet for landing instructions.

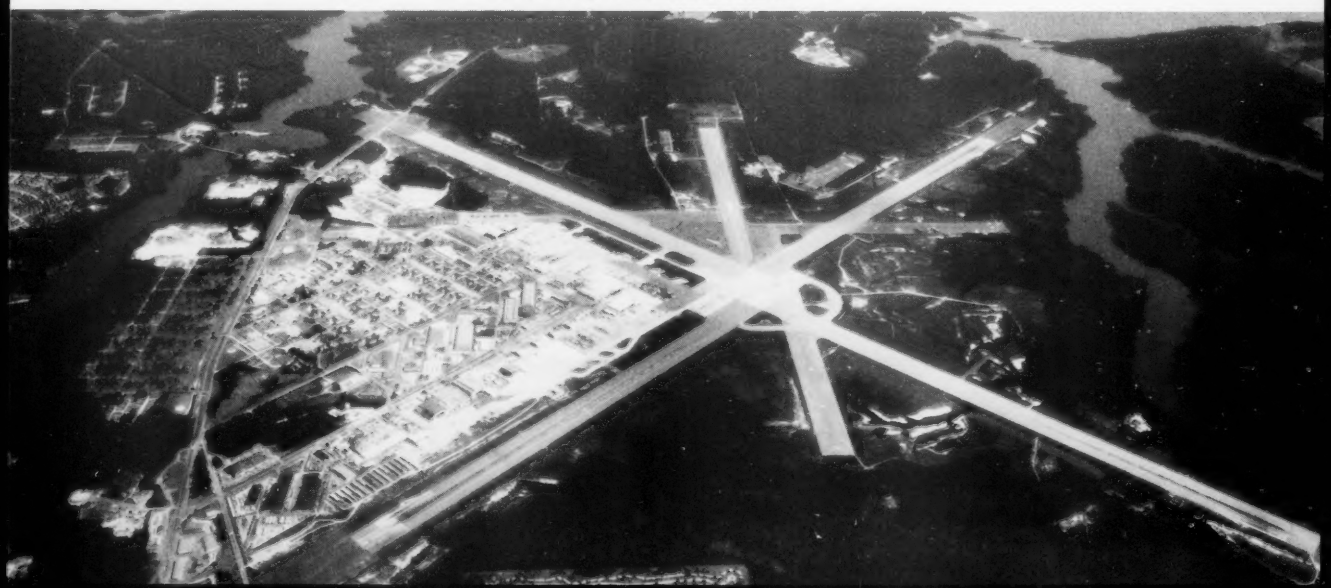
Airfield Precautions. MCAS Cherry Point is the hub of high density operational and training flights. Numerous types of aircraft that range from high speed jets to helos and small aero club aircraft are continuously transitting the area. A constant lookout should be maintained at all times. Live firing ranges (air and ground) are either in or adjacent to the Point's restricted areas. There are ACMR, aerial refueling, supersonic and aerobatic flying areas under Cherry Point's control. Aircraft with hazardous or dangerous cargo must notify Approach or tower at least 30 minutes (if possible) prior to landing or takeoff for special instructions. The field does have a designated redline area for these type flights. Other than these precautions and the presence of the hovering *Harriers,* Cherry Point is relatively obstruction free as it lies among the peaceful pines and swamps of eastern North Carolina.

Aircrew Facilities. Limited transient quarters and messing is available at Cherry Point. Personnel planning to RON at NKT should phone ahead for reservations. There is a BOQ and a BEQ but no SNCO/CPO quarters available. Messes (Open) are available for all ranks/rates. The station has a general mess available to aircrews in addition to the new snackbar at Base Ops. The snackbar is open until 1800 Monday-Friday; Saturday 0600-1300; closed Sunday and holidays. Outside the main gate are a few good restaurants and motels. Official government and commercial ground and air transportation can be arranged at Base Ops. A complete air freight and passenger service is located in the same building as the tower. Inflight rations can be obtained through the assistance of the Ops duty officer.

MCAS Cherry Point is an Aerodrome of Entry that has agricultural and custom inspectors available on request for flights arriving from outside CONUS. Police dogs are provided on request and occasionally are used on "spot checks" of aircraft landing at NKT.

Personnel at MCAS Cherry Point hope that this information will assist you in some way the next time you fly to or along the East Coast. If you plan to spend some time there, don't forget to bring your sports gear. This fine facility has some of the best golfing, fishing, and hunting to offer, all in addition to its flight operations. Welcome to the Corps' largest and one of its finest airfields where *SAFETY* is always on duty! ◄

MCAS Cherry Point, North Carolina.



Letters

Tell It Like It Is!

Norfolk, VA – (Re: "Problems? Holler Mayday!") After flying many types of aircraft for over 20 years, several coinciding with the aviation safety and air traffic control business, I for one am a firm believer in the closing comments of the referred article. "When you're in trouble, *declare an emergency!*"

When confronted with a problem in the air or on the ground, let the appropriate facility know *pre post facto* rather than *ex post facto*. The more time they have to get set up for possible or probable assistance enhances your chances of survival, escape, or rescue as the case may be. Now, I'm not talking about every little strange sound that may emit from the aircraft (particularly those that arise at night, in the soup, or on the cat), but rather those that you were supposed to know were actual trouble sounds – if in fact you knew your aircraft like you should. A professional aviator should know the difference, but then again, don't try to second-guess the system if there is doubt.

Just why some aviators are reluctant to declare an emergency when there are suspected or actual problems may always remain a mystery. There are a lot of accidents in the record books that are still *undetermined* as to the exact cause. No one could determine the cause(s), and had the pilot declared his problems (if he were able) in the first place, maybe the cause could have been pinpointed and prevented. Some of these reluctant pilots often used the terms "deferred emergency," "low fuel state," "no waveoff approach," etc., not really admitting that there may be a real problem – until it's too late. If one declares an emergency and doesn't have a *bona fide* one, what kind of "heat" will he take at Happy Hour or in the readyroom? Maybe peer pressure is one of the reasons why pilots keep this type problem (and others) to themselves. That's for the experts in the aero-med field to figure out, but the pilot must 'fess-up when talking with them. Communications is a two-way street.

Don't let ego, pride, complacency, or "I can hack-itis" substitute for good solid judgment, common sense, and knowledge of your aircraft. Above all, don't be reluctant to ask for advice from those other experts on the ground or in the air. I, for one, do not recall many instances where the pilot who declared an emergency got as much heat from his peers and others as did the aviator who didn't 'fess-up and committed a Delta Sierra. He usually took the "gas" for a long time to come. For some reason, the Delta Sierras seem to last a lot longer than the *Bravo Zulus!*

G. C. Sewell (Ret.)

Water Survival

MCAS Yuma – I heartily concur with the letter on parasail training by LT Joseph Dyer in the DEC '78 issue of APPROACH. With the current interest in improving water survival training and reducing drownings after overwater ejections, his comments are indeed pertinent.

Water survival training should be as realistic as possible. What could be more realistic than actually descending in a parachute into the water? I also had parasail training when I attended Air Force Flight School in 1969-1970 at Craig Air Force Base. In my case it was a parasail ride behind a pickup truck and we were practicing our parachute landings in a large field. It was one thing to practice our landings by jumping off a 10-foot tower and quite another during our parasail ride.

The training received from a parasail ride is without a doubt superior. Marine Corps air stations are located on both coasts, and a large percentage of our training also takes place over water. It is not often that the Air Force can teach Naval aviation something, but in this case they have a good idea.

Capt J. E. Ingersoll, USMC
VMAT-102

Re: "Is Experience the Key?"

Norfolk, VA – The article in the OCT '78 issue, "Is Experience the Key?" by Dr. Borowsky and Ms. Barrett proved once again that there is no substitute for experience. It's too bad that aviation can't find a way to bypass the fledgling stage of flying and go directly to the experienced and safe stage. However, we haven't found a way to do this yet, and until we do, there will always be accidents of some sort. Hopefully, through sound training, solid supervision, and safe practice, plus a lot of commonsense and good judgment, these accidents will be reduced to a bare minimum.

The article was obviously a result of long, time-consuming hours spent researching the data that enabled the two authors to come up with the published results. At our local association, there

APPROACH welcomes letters from its readers. All letters should be signed though names will be withheld on request. Address: APPROACH Editor, Naval Safety Center, NAS Norfolk, VA 23511. Views expressed are those of the writers and do not imply endorsement by the Naval Safety Center.

has come up a question or two concerning the statistics involved in the article. The article refers to the phrases: "combined All-Navy"; "every Navy pilot submits IFARS"; and "All-Navy." The first and last term indicates that Marine pilots were included in this study, whereas the second term excludes Marines, even though Marine pilots submit IFARS, too. Also, adding to the confusion whether Marine pilots were or were not included in the study, was the type aircraft mentioned (A-7, F-4, A-6). The last two are common to both services whereas the first is not. Which leads us to the obvious: Were Marine pilots included in the study? And, if not, is there a future study being done to include Marine pilots?

We at the Marine Corps Aviation Association enjoy APPROACH as it keeps us in touch with *all* Naval aviation – Navy and Marine pilots alike.

Maj J. T. Toade, USMC (Ret.)

• Marine pilots were not included in the Borowsky/Barrett study because of the lack of validated lifetime flight-hour information. A Naval Safety Center study currently being performed does include Marine pilots. The terms "All-Navy" and "Navy" do refer to only Navy pilots, whereas "Naval" and "all Navy/Marine" denote Navy and Marine pilots.

Re: "Judgment Failed"

NAS Pt. Mugu – In regard to your article in the NOV '78 issue of APPROACH, "Judgment Failed," I would like to make a few points lest your article contribute to further denigration of that PPC's judgment. I offer the following rhetorical questions.

You mentioned that this flight was carrying passengers, yet no mention is made of who or how many. Was this flight tasked by higher authority (i.e., the Wing)? If this is true, what was the degree of pressure to accomplish the task during this specific time frame? Did the PPC brief the squadron CO, XO, and/or Ops officer on the forecast terminal weather? Did he request the assignment of a more qualified copilot? Was there a more qualified pilot onboard? All these questions should probably be asked to establish the amount, if any, of supervisory error in scheduling the mission and/or crew.

An unanswered question is that of PP3P's qualifications, *vis-a-vis*, the OPNAVINST 3710.7J requirement as stated in paragraph 310.b(2). This paragraph requires that if passengers are carried, the copilot must be "qualified in model." Paragraph 120.00 further defines "qualified in model" as meeting the minimum requirement for qualification in a specific crew position, as set forth in the appropriate NATOPS Flight Manual. If NATOPS guidance is lacking (as it is in the P-3 NATOPS manual), an individual shall be considered "qualified in model" for specific crew position when so designated by the squadron CO. Therefore, it seems reasonable to deduce that the copilot's PP3P designation letter that qualifies him to perform all duties as a relief copilot *defacto* qualified him in model. In short, he was "legal" as a copilot on a passenger-carrying mission.

Your statement that "personal minimums for the copilot, not NATOPS-qualified in model, were 200 feet and one-half mile" may cause many readers to doubt your credibility. While this statement is true if one has an "old" OPNAVINST 3710.7*H*, it is in error in reference to 3710.7*J*. Fortunately, the new paragraph 413b has eliminated that vague and restrictive requirement.

Continuing in the article, I take serious exception with the statements contained in the paragraph, "One questions the action of any PPC . . . " You may question the action. I do not. I feel that those statements are extremely counterproductive in maintaining VP's fine safety record.

Executing an instrument approach to minimums in a safe manner does not require any more in "ultimate technique" than obtaining a standard instrument rating. I feel that any DNA or SNA who qualifies for a standard instrument rating has the requisite skill or technique to perform that evolution. Further, I believe a strong case can be made for one of two alternatives when the weather is marginal:

First, unless there is an overriding necessity for skill in controlling the aircraft on the deck, is to let the copilot execute the approach from the left seat. This allows the PPC to be the safety observer and be free to make that critical decision at DH/MDA whether a safe landing can be executed or not. Second, is the technique of letting the copilot execute the approach from the right seat, like some airlines, and the PPC taking over at DH to complete the landing. As this method involves change of physical control of the aircraft at low altitudes, it should only be attempted by cockpit teams that have practiced it and should be thoroughly briefed on each occasion.

Finally, I should like to address your seemingly inconsistent editorial license. Two articles in the same issue dealt with misjudgment of aircraft commanders in the landing environment (see pgs. 8 and 9, "The Right Time, But the Wrong Place"). Basically, both were equally at fault, yet you went to extremes, I feel, in chastising the P-3 PPC while more or less just reporting the facts in the T-39 mishap.

Inconsistencies of this nature may seriously impair the ability of NAVSAFECEN to stimulate and maintain a free and open forum for the exchange of safety information.

CDR W. D. McClellan, NARU
VP Program Manager

• You have raised some interesting points. We hope your letter is only the first of many from P-3 pilots. Our only rhetorical questions are: Did the P-3 run off the runway? and Did the PPC order or execute a waveoff?

Re: "Quit Pickin' on the Pilots!"

MIDPAC – In your letters section of the JAN '79 issue, "Quit Pickin' on the Pilots All the Time!", mention of articles written on supervisory error was suggested. Hopefully, there is one or more coming in future issues, as the article's author hinted. Not being a literary giant, I won't attempt such an endeavor, but maybe the "Quit Pickin'" author would like to know that there are many cases involving mishaps where the supervisory personnel *have been* put on report. Such was the case involving an accident by our sister service when one of its helos crashed while attempting to land at an extremely high altitude landing site. Whether this site was authorized or not, I really don't know, but the assigned cause factors were:

- *Supervisory*. Group and squadron level improperly managed personnel assets and didn't adequately prepare the detachment's OIC for the mission/deployment.
- *OIC*. Didn't evaluate aircrew's capabilities vs mission requirements.
- *Pilots*. Violated NATOPS and operated outside the aircraft's performance envelope for the given situation.

Although the pilots did err, it is enlightening (to a degree) to know that those "supervisors" up the line do have a job to do and are occasionally at fault like the rest of us. They, too, must carry their share of the load and accept their responsibilities in the chain of aviation safety. It would be great, however, not to *have* to blame anybody!

Name Withheld

approach

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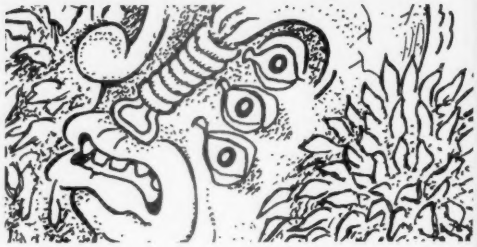

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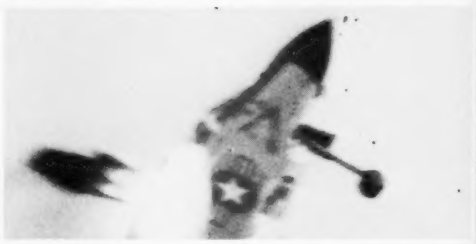

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DISTRIBUTION/Requests for distribution changes should be directed to NAVSAFECEN, NAS Norfolk, VA 23511, Attn: Safety Publications Department. Phone: Area Code 804, 444-1321.

PRINTING/Issuance of this periodical approved in accordance with Department of the Navy Publications and Printing Regulations, NAVEXOS P-35. Library of Congress Catalog No. 57 60020.

CREDITS/This month's cover of a Marine Corps AH-1J *Sea Cobra* was painted by APPROACH artist Blake Rader.

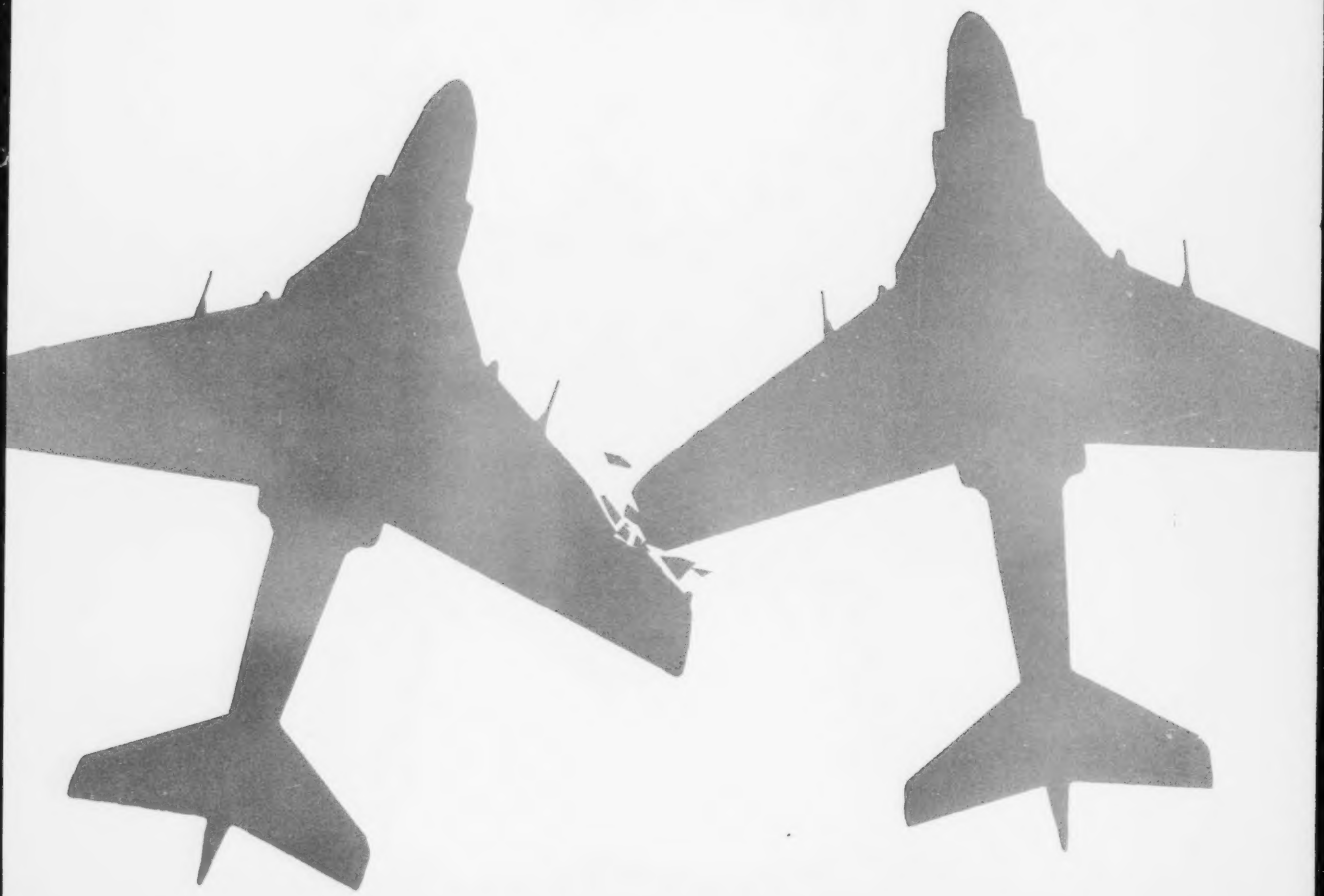
☆U. S. GOVERNMENT PRINTING OFFICE: 1979—636-495

There is no such thing as a small thunderstorm.

Idea contributed by LCDR J. L. Murphy III, VX-1

"I don't know how it happened, they were no where close."

A FLIGHT DECK CRUNCH CAN SPOIL YOUR WHOLE DAY.



Idea contributed by AE1 K. C. Owings, VP-92 Safety PO.